

REMARKS

Claims 1 and 5-30 are pending. By the foregoing amendment, claims 27-30 are canceled. Claims 1 and 16 are amended as recommended by the Examiner to overcome objections to certain informalities. Claim 5 is amended to clarify that the order of addition of zinc solution and solid oxide is not critical and the inventive method includes either order – see page 4, lines 14-15. Claims 31-34 are added; support for these claims can be found at page 4, lines 22-27.

Rejections under 35 U.S.C. § 102(e)

Claims 1, 5-7, 9-15, 19-20, 23 and 26 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,413,449 to Wieland et al. This rejection is respectfully traversed.

The cited U.S. Patent to Wieland appears essentially identical to the priority European Patent Application EP 1,061,011A1 (published more than a year before filing of the present application). A copy of an English language translation of the EP application has been submitted previously in an Information Disclosure Statement.

Applicants have discussed and distinguished this reference on page 1, line 26 to page 2, line 3 of the application. See also Wieland, Example 1 and Table 1. In their application, Applicants have pointed out that Wieland's catalyst does not have the claimed volumetric productivity. Accordingly, the rejection of claim 1 should be withdrawn.

Claim 5 recites that the Pd is deposited after the step of adding a base to increase pH. As noted on page 8, lines 3-7, this order is important in obtaining a superior catalyst. Applicant's method is described at page 4, line 3 - page 5, line 2 and Example 3. It is clear from Applicants' descriptions that "depositing Pd" must include a step of adding Pd. Wieland's method is the reverse of Applicants' method, with base added after the addition of Pd. Therefore, the rejection of claim 5 should be withdrawn since Wieland et al. do not deposit Pd (that is, they do not add Pd) after base has been added.

The method of claim 5 is further patentable over Wieland et al., because Wieland et al. do not disclose of adding a solution comprising dissolved zinc to a metal oxide support, nor adding a solid oxide support to a solution comprising dissolved zinc. Claim 5 requires "adding a solution

comprising dissolved zinc to the solid metal oxide support, or adding a solid metal oxide support to a solution comprising dissolved zinc.” In contrast, Wieland et al. combine a metal oxide with insoluble zinc oxide in an aqueous dispersion. It is true that Wieland et al. state that they subsequently dissolve a portion of the zinc in the acidic Pd solution; however, this does not constitute a step of “adding” a zinc solution. In other words, Wieland et al. state that they form a zinc solution *in situ*; however, they do not “add” a solution comprising dissolved zinc. Therefore, the rejection of claim 5 should be withdrawn since Wieland et al. do not “add” a solution comprising dissolved zinc, nor a “add” a metal oxide support to a comprising dissolved zinc.

The dependent claims are further allowable based on the limitations recited therein. For example, claim 9 recites that the zinc is completely dissolved in the solution. In contrast, Wieland et al. do not teach any step of adding zinc that is completely in solution. Note that at col. 7, lines 33-40, Wieland et al. state that the finely divided zinc oxide powder is partially dissolved by the addition of the acidic noble metal solution. Similarly, claim 12 recites a step of adding base after the zinc solution is added, while Wieland does not add any zinc solution.

Rejections under 35 U.S.C. § 103

Applicants traverse the section 103 rejections for the reasons described above.

Claims 16 and 22 are additionally patentable because there is not a proper motivation to combine the teachings of Wieland and Feinstein. Feinstein discloses catalysts containing 0.5 % Ru and Zn on alumina. Neither Feinstein nor Wieland teaches or suggests a catalyst comprising Pd, Ru and Zn. Wieland et al. describe a catalyst for steam reforming alcohols; reacting alcohols with water to form hydrogen and carbon dioxide. Feinstein teaches a catalyst for selectively demethylating ethyl aromatics in the presence of hydrogen to produce methyl aromatics (see Summary). Thus, the reaction mechanisms of Wieland and Feinstein are totally unrelated. For this and other reasons, the combination of Wieland and Feinstein is improper.

Conclusion

If the Examiner has any questions or would like to speak to Applicants' representative, the Examiner is encouraged to call Applicants' attorney at the number provided below.

Respectfully submitted,

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